

Attorney Docket No. MSU 4.1-553
Appl. No. 09/917,147
Declaration Dated: March 28, 2006
Response to Office Action mailed 3/02/2006



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No. : 09/917,147 Confirmation No. 1331
Applicants : Thomas J. Pinnavaia, Zhaorong Zhang
and Randall Hicks
Filed : July 27, 2001
TC/A.U. : 1754
For : MESOSTRUCTURED TRANSITION ALUMINAS
Examiner : Alvin T. Raetzsch
Docket No. : MSU 4.1-553
Customer No. : 21036

MAIL STOP AMENDMENT
Commissioner For Patents
P.O. Box 1450
Alexandria, VA 22313-1450

DECLARATION UNDER 37 C.F.R. § 1.132

Sir:

Thomas J. Pinnavaia states as follows:

(1) That he is a Distinguished Professor at Michigan State University, East Lansing, Michigan and is a researcher in the field of aluminas in general and boehmite in particular and has authored numerous papers

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in this field.

(2) That he repeated the Examples 1 to 4 of U.S. Patent No. 6,506,358 B1 to Stamires et al. Two distinguishing aspects of the process used by Stamires et al are that (a) no organic modifier is used and (b) that only acidic reaction conditioners (less than pH 7) are used. Thus diffraction patterns were run as shown in the attached Figures 1A, 1B, 1C; 2A and 2B; 3A and 3B; and 4A and 4B with the diffractometer in the "wide angle slits" mode which refers to the slit widths use for taking wide angle diffraction patterns. Most diffraction patterns are obtained using this slit configuration. This procedure duplicates the patterns shown in the Stamires et al Patent No. 6,506,358 B1 so I am confident that Stamires et al also used wide angle slits in obtaining these disclosed patterns. The increase in intensity that occurs both for his reported patterns and for the patterns I obtained in reproducing his compositions is due to background radiation from the x-ray source, which is not filtered out with the slits in the wide angle configuration. Thus, the increase in intensity below ten degrees two theta in Stamires et al is not due to a Bragg

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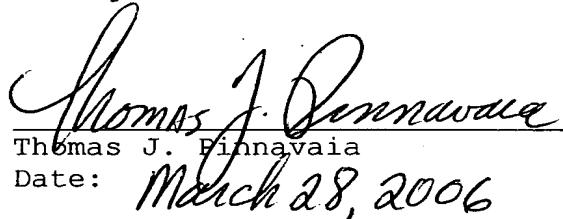
reflection. Proof of this conclusion is provided by the diffraction patterns taken with the slits in a small angle configuration, which is the configuration that I used in reporting the low angle diffraction peak in the above referenced patent application. I also ran all four of the Stamires et al samples using small angle slits, the intensity below ten degrees is reduced because the slits filter out the background radiation coming from the x-ray source. Under small angle slit conditions there are no small angle diffraction peaks for any of the Stamires et al samples produced by Examples 1 to 4.

(3) That the presently claimed boehmites have "at least one low angle x-ray diffraction line corresponding to a lateral spacing of at least 2.0 nm" (Claims 1, 3 and 7). In fact, the Examples in the application show a small angle 22 peak between 3 and 0.5 degrees indicative of a mesostructure as in Figures 1, 4 and 7 in the application. This is consistent with the presence of the "organic modifier" as claimed and the different processing conditions which were used, including ammonium hydroxide as a basic neutralizing

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agent.

(4) That the undersigned declares further that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of the Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.


Thomas J. Pinnavaia
Date: March 28, 2006

Enclosures: Figures 1A-1C; 2A-2B; 3A-3B and 4A-4B
Figure captions